

**System and Method for  
CPI Scheduling on SMT Processors**

**ABSTRACT**

A system and method for identifying compatible threads  
5 in a Simultaneous Multithreading (SMT) processor  
environment is provided by calculating a performance  
metric, such as CPI, that occurs when two threads are  
running on the SMT processor. The CPI that is achieved  
when both threads were executing on the SMT processor is  
10 determined. If the CPI that was achieved is better than  
the compatibility threshold, then information indicating  
the compatibility is recorded. When a thread is about to  
complete, the scheduler looks at the run queue from which  
the completing thread belongs to dispatch another thread.  
15 The scheduler identifies a thread that is (1) compatible  
with the thread that is still running on the SMT processor  
(i.e., the thread that is not about to complete), and (2)  
ready to execute. The CPI data is continually updated so  
that threads that are compatible with one another are  
20 continually identified.